AMENDMENTS TO THE CLAIMS

The following is a complete listing of the claims, which replace all previous versions and listings of the claims.

1. (previously presented) A rotating electrical machine, comprising:

a superconductive rotor coil; and

a rotatable shaft, comprising:

an axial passageway extending through the rotatable shaft; and

a first passageway extending through a side wall of the rotatable shaft to the axial passageway, wherein the axial passageway and the first passageway are operable to convey a cryogenic fluid to the superconductive rotor coil;

wherein the first passageway is oriented transverse to the axial passageway at least through the side wall.

2. (currently amended) The rotating electrical machine as recited in claim 1, further comprising a second passageway extending through the side wall of the rotatable shaft to the axial passageway and operable to return the cryogenic fluid from the superconductive coil.

3. (original) The rotating electrical machine as recited in claim 2, further comprising a first axial tube and a second axial tube disposed telescopically within the axial passageway.

4. (original) The rotating electrical machine as recited in claim 2, further comprising a first axial tube and a second axial tube disposed side-by-side within the axial passageway.

5. (original) The rotating electrical machine as recited in claim 3, wherein the first passageway is coupled to the first axial tube and the second passageway is coupled to the second axial tube.

6. (original) The system as recited in claim 3, wherein the first axial tube and the second axial tube are doubled walled.

7. (original) The rotating electrical machine as recited in claim 3, wherein the first axial tube and the second axial tube each comprise a coating operable to reduce the emissivity of the first axial tube and the second axial tube to reduce radiative heat transfer to the cryogenic fluid.

8. (original) The rotating electrical machine as recited in claim 2, further comprising a cryogenic transfer coupling disposed radially around the rotatable shaft, wherein the cryogenic transfer coupling is operable to direct cryogenic fluid to the first passageway and to receive cryogenic fluid from the second passageway.

9. (original) The rotating electrical machine as recited in claim 1, wherein the rotating electrical machine is a generator comprising a stator.

10. (previously presented) The rotating electrical machine as recited in claim 2, wherein the first passageway and the second passageway extend radially though the rotatable shaft.

11. (previously presented) A system for cryogenically cooling a superconductive rotor coil, comprising:

a transfer coupling comprising a passageway operable to be disposed radially around a rotatable shaft to couple cryogenic fluid between a source of cryogenic fluid and

another passageway extending through the rotatable shaft, wherein the cryogenic fluid is coupled from the rotatable shaft to the superconductive rotor coil;

wherein the passageway and the other passageway are generally transverse to one another.

12. (original) The system as recited claim 11, wherein the transfer coupling comprises a rotatable member secured to the rotatable shaft and a stationary member disposed in sealing arrangement with the rotatable member.

13. (previously presented) The system as recited claim 12, wherein the stationary member is aligned to direct cryogenic fluid into a first passageway in the rotatable shaft and to receive cryogenic fluid from a second passageway in the rotatable shaft.

14. (original) The system as recited in claim 13, further comprising a first axial tube and a second axial tube disposed within the rotatable shaft, wherein the first passageway directs cryogenic fluid into the first axial tube and the second passageway receives cryogenic fluid from the second axial tube.

15. (original) The system as recited in claim 14, wherein the first axial tube and the second axial tube are oriented in a telescopic orientation.

16. (original) The system as recited in claim 14, wherein the first axial tube and the second axial tube are oriented in a side-by-side orientation.

17. (previously presented) The system as recited in claim 14, wherein the first axial tube and the second axial tube are double walled vacuum-sealed tubes.

18. (previously presented) The system as recited in claim 14, wherein the first axial tube comprises a coating operable to reduce radiative heat transfer from the first axial tube to the cryogenic fluid.

19. (original) The system as recited in claim 13, comprising a first radial tube disposed in the first passageway to thermally insulate the cryogenic fluid flowing through the first passageway from the rotatable shaft.

20.-41. (canceled)

42. (currently amended) A rotating electrical machine, comprising:

a rotor coil; and

a rotatable shaft, comprising:

a lengthwise passageway extending in a lengthwise direction through the rotatable shaft; ~~and~~

a crosswise passageway extending in a crosswise direction through an outer perimeter of the rotatable shaft to the lengthwise passageway, wherein the lengthwise and crosswise passageways are disposed in a coolant path extending to the rotor coil; and

another crosswise passageway extending in another crosswise direction through the rotatable shaft to the lengthwise passageway.

43. (canceled).

44. (previously presented) The rotating electrical machine as recited in claim 42, comprising a plurality of tubes disposed telescopically within the lengthwise passageway.

45. (previously presented) The rotating electrical machine as recited in claim 44, wherein at least one of the plurality of tubes is coupled to the crosswise passageway.

46. (previously presented) The rotating electrical machine as recited in claim 42, comprising a coolant transfer coupling disposed radially around the rotatable shaft, wherein the coolant transfer coupling is operable to exchange a coolant fluid with the crosswise passageway.

47. (new) The system as recited in claim 11, further comprising a first passageway extending through a side wall of the rotatable shaft to the other passageway; wherein the first passageway and the other passageway are operable to convey a cryogenic fluid to the superconductive coil.

48 (new) The system as recited in claim 47, further comprising a second passageway extending through the side all of the rotatable shaft to the other passageway; wherein the second passageway and the other passageway are operable to return the cryogenic fluid from the superconductive coil.

49. (new) The rotating electrical machine as recited in claim 42, wherein the crosswise passageway and the lengthwise passageway are operable to convey a cryogenic fluid to the rotor coil.

50. (new) The rotating electrical machine as recited in claim 49, wherein the other crosswise passageway and the lengthwise passageway are operable to return the cryogenic fluid to the rotor coil.

51. (new) The rotating electrical machine as recited in claim 8, wherein the cryogenic transfer coupling further comprises a rotating collar coupled to the rotatable shaft and a stationary collar disposed around the rotating collar.